

Biosolids Environmental Management System



King County
Department of
Natural Resources and Parks
Wastewater Treatment Division

September 2005



The EMS is a rigorous system which brings together all wastewater personnel to attain the highest quality of biosolids possible at reasonable cost.

Recycling Partners in the EMS:

Great Western Soil Conditioners Inc.

Natural Selection Farms Inc.

Boulder Park Inc.

RAMCO Inc.

GroCo Inc.

2005 Performance Report

King County's Wastewater Treatment Division continues to implement and improve its Environmental Management System (EMS) for biosolids. Since this time last year we have refined our procedures, attained some significant goals/objectives, conducted our first EMS Management Review, tested a new method to perform our Internal Audits and improved our biosolids quality and management practices. We invite you to read further to get the details of our achievements, accomplishments and what direction we want to pursue in the future.

Internal Audits

One of the significant achievements for 2005 has been pioneering and testing a new method of conducting our annual EMS Internal audits. It all started with the desire to reduce audit costs while still achieving a meaningful evaluation of our system. We decided to discuss this idea with other agencies in our area. Fortunately there is a very active and beneficial organization called the Northwest Biosolids Management Association (NBMA) which is comprised of over 200 wastewater utilities and consultants. Their work is typically accomplished through several committees that direct activities and implement NBMA goals. A proposal was suggested and approved in February 2005 to test a new committee, called Continual Improvement Systems. One of their missions was to explore how we could help each other with auditing requirements.

Seven agencies were interested and able to attend an informational/brainstorming meeting in March. We all agreed that having a pool of EMS-experienced personnel could provide a mechanism to reduce our audit costs while providing a meaningful evaluation with a bonus of allowing us to learn new ideas and concepts from each other. A win-win situation for all participating agencies!

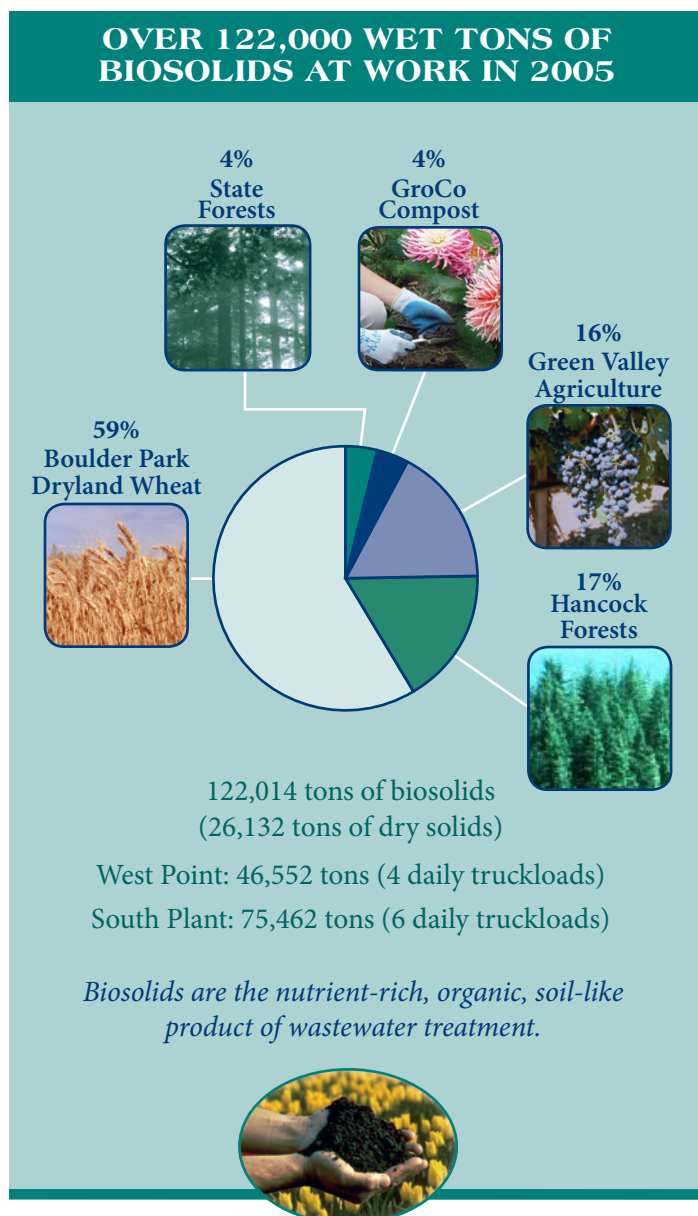
King County's internal audit was conducted on four different days over a three-week period in April and May of 2005 using volunteers from three other Northwest wastewater utilities, who are also developing a biosolids EMS. This allowed for a good cross-section of our biosolids value chain to be interviewed (59 people) while not putting too large of a burden upon any one agency. This model seems to work very well and we will continue to refine this approach during future internal audits.



Class A biosolids workshop participants not only get a chance to learn about the benefits of biosolids soil amendments but also get to create their very own mixes!

Internal Audit Findings

Overall, King County's staff and recycling partners are aware of the EMS for biosolids and understand how it relates to their job. No major nonconformances were identified but some findings for continual improvement were noted. Some personnel have been more involved and so their understanding and familiarity with the EMS is greater than others who have been less involved. With more time and training that should level-off across all members of the biosolids value chain. Below are findings from the May 2005 internal audit. We have established Corrective Action Plans (CAPs) to remedy our weaknesses (see Element 14) and we will work on these in the coming year.



Strengths:

- Staff built on each other's answers to provide comprehensive responses.
- Increased awareness of EMS compared to last audit due to training.
- EMS manual is quite thorough; good use of flow charts throughout manual.
- Proactive outreach program including open houses, tours and workshops.
- Work request/work order (Mainsaver) system very well established at treatment plants.
- Using intranet to maintain records and store latest version of SOPs.
- Great layout and design for performance report, user friendly (copied by other agencies).
- Table 17 useful to track management decisions.

Weaknesses:

- Some staff still have difficulty finding answers to questions, and are not using table of contents and other references and tables in EMS manual.
- Don't always have "objective evidence", examples and manuals easily accessible.
- Most staff not familiar with SMART criteria which should be defined and used for all goals and objectives.
- Not clear how public suggestions become action items.
- Need to show that communication records are "integrated" between sections and include a time requirement for responding to input.
- Current SOPs not always available, signed and marked with number and/or dated.
- Uncertainty about process to track nonconformances for day-to-day vs. audit.

THE BIOSOLIDS VALUE CHAIN



Management Review

In November 2004, we conducted our first formal Management Review of our EMS. Eight members of WTD management met to discuss our past performance and future direction of our biosolids EMS. The Biosolids Value Chain had accomplished 95% of the targeted objectives so most of the discussion focused on what we could do to improve the system and its outcomes in 2005. Five major decisions were made by WTD management:

- 1) Move to fully implemented EMS program and maintain our certification.
- 2) Increase staff involvement in the EMS and encourage participation from operations & maintenance.
- 3) Refine biosolids EMS training so it is specific for each employee's job duties.
- 4) Approve EMS Division policy statement and publicize to all staff.
- 5) Create internal EMS audit team including reps from other local agencies.

Action plans were formulated for all of these decisions and many have been achieved (see Table 17 in EMS Manual).

Achievements - Outcomes Matter

We established our goals and objectives to meet stringent NBP requirements. Particular attention was given to improving our performance in four key areas. Our accomplishments related to each area are listed below. Some of these are related to more than one area.

1) Environmental protection

- Reduced visible plastics/debris in biosolids by installing grinders and screens at treatment plant.
- Reduced truck trips and haul costs by producing a drier biosolids cake.

2) Regulatory compliance

- No biosolids permit violations in last five years.
- Required installation of dental amalgam separators to meet mercury discharge limits.

3) Relations with interested parties

- Investigated best option to produce Class A biosolids and prepared retro-fit plan for each treatment plant.
- Conducted surveys of our customers to keep informed of their opinions.

4) Best management practices

- Installed automatic tarps on haul trucks to prevent operator back injuries
- Committed to long-term research on biosolids odors.



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FOR MORE INFORMATION:



Please visit our Web site at

<http://dnr.metrokc.gov/WTD/biosolids/EMS.htm>

- General information on the EMS
- Biosolids quality and annual project summaries
- Annual report on biosolids
- EMS audit reports
- Annual EMS performance report
- EMS Outcomes



Or call

Lisa Vogel at (206) 263-3428

Stay Tuned

In July 2005, WTD management decided to postpone our third party audit since the NBP is looking at refining the schedule. A decision should be made by December 2005 which will dictate our future direction.

